



***SAFE AND CONNECTED***



# NDOT E720 NEW EQUIPMENT



- **FY 2016 Request**





# **Request Transportation Board Approval to purchase New fleet vehicles**

NRS 408.389 states that the Department shall not purchase any equipment which exceeds \$50,000, unless the purchase is first approved by the Transportation Board.

The total purchase of these vehicles is approximately \$1,350,000 from FY 2016.





# Approved Biennial Legislative Budget

NEVADA DEPARTMENT OF TRANSPORTATION  
BUDGET ACCOUNT 201-4660  
BUDGET REQUEST FISCAL YEARS 2015-2016 AND 2016-2017  
ENHANCEMENT

AGENCY REQUEST  
AUGUST 31, 2014

GOVERNOR RECOMMENDS  
JANUARY 19, 2015

NDOT OBJECT	OBJECT TITLE DESCRIPTION / JUSTIFICATION / DOCUMENTATION OF NEED	2016 A00	2017 A00	2016 G01	2017 G01
E720 EQUIPMENT - CATEGORY 05					
REVENUE - CATEGORY 00					
00-2507	Highway Fund Authorization	\$ 3,689,502	\$ 2,749,055	\$ 3,598,017	\$ 2,748,741
TOTAL REVENUE - CATEGORY 00		\$ 3,689,502	\$ 2,749,055	\$ 3,598,017	\$ 2,748,741

## EQUIPMENT - CATEGORY 05

As required by the Budget Instructions, expenses associated with the purchases of new equipment are included as an enhancement. This decision unit is requesting budget authority to purchase operational equipment items that will cost greater than \$5,000 and several specialized equipment items, all of which are detailed separately and are summarized below by object code.

	2016	2017		
CAT 04/05 PROJECT NEON TEMPORARY FIELD OFFICE				
04 - 7771 SOFTWARE	\$ 27,090	\$ 27,090	\$ 27,150	\$ 27,150
05 - 8241 OFFICE FURNITURE	\$ 194,400	\$ -	\$ 196,800	
05 - 8271 PROJECTOR	\$ 2,000	\$ -	\$ 1,500	
05 - 8370 COMPUTER HARDWARE > \$5,000	\$ 136,317	\$ -	\$ 35,537	
05 - 8371 COMPUTER HARDWARE < \$5,000	\$ 69,695	\$ 21,965	\$ 77,030	\$ 21,591
	<u>\$ 429,502</u>	<u>\$ 49,055</u>		
05-8274 SPECIALIZED EQUIPMENT (NDOT Operational Equipment)	<u>\$ 1,750,000</u>	<u>\$ 1,750,000</u>	\$ 1,750,000	\$ 1,750,000
Operational equipment includes a wide variety of equipment such as computers, office furniture, laboratory test equipment, shop tools and miscellaneous survey equipment.				
05-8276 MATERIAL / ENVIRONMENTAL EQUIPMENT				
CS9300 High Speed Profiling Systems	\$ 80,000	\$ -		
PM-10 Sweepers (three each year)	\$ 870,000	\$ 870,000		
Culvert Cleaner Truck	\$ 250,000	\$ -		
	<u>\$ 1,200,000</u>	<u>\$ 870,000</u>	\$ 1,200,000	\$ 870,000
04-7460 EQUIPMENT < \$1,000				
EDOC Field Devices -tablets or IPADS - (100 @ \$800 each)	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000
	<u>\$ 80,000</u>	<u>\$ 80,000</u>		
05-8280 LIGHT AND HEAVY CONSTRUCTION & MAINTENANCE EQUIPMENT				
Viking TP26, 26' Tow Plows with swivel tongue (two)	\$ 230,000	\$ -	\$ 230,000	
	<u>\$ 230,000</u>	<u>\$ -</u>		
	<u>\$ 3,689,502</u>	<u>\$ 2,749,055</u>		
ENHANCEMENT - NEW EQUIPMENT - E720		\$ 3,689,502	\$ 2,749,055	\$ 3,598,017 \$ 2,748,741

Attachment 1  
E720 NEW EQUIPMENT  
PAGE 1 OF 1



# NEW NDOT VEHICLES

## FY 2016 NEW EQUIPMENT

CLASS	DESCRIPTION	Fuel Type	LOCATION	EST. COST	Cumm Cost
24	PM-10 self Propelled Street Sweeper	Dsl	District 1	\$290,000	\$290,000
24	PM-10 self Propelled Street Sweeper	Dsl	District 1	\$290,000	\$580,000
24	PM-10 self Propelled Street Sweeper	Dsl	District 1	\$290,000	\$870,000
20	Culvert Cleaner Truck	Dsl	District 1	\$250,000	\$1,120,000
80T	Viking TP26, 26' Tow Plow	N/A	District 3	\$115,000	\$1,235,000
80T	Viking TP26, 26' Tow Plow	N/A	District 3	\$115,000	\$1,350,000



# 3 - SWEEPERS





# 1 – Culvert Cleaner Truck







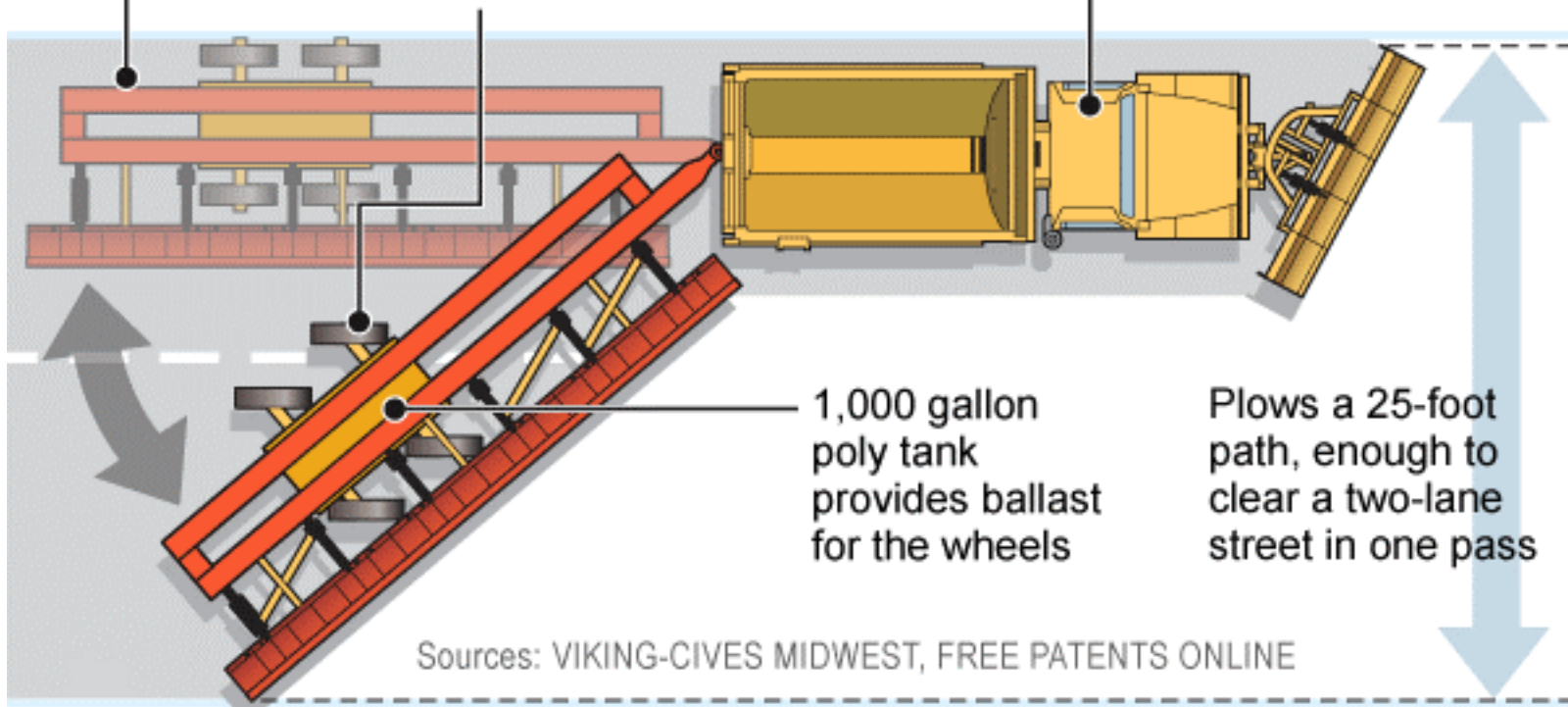
# 2- TOW PLOWS

The TowPlow is towed like a normal trailer

Two steering axles swing out 30 degrees

In-cab controls steer rear axles, lift and lower blade

Able to plow at normal speeds



Sources: VIKING-CIVES MIDWEST, FREE PATENTS ONLINE





# District 3 – TOW PLOW





# Attachment 2 – COST AND BENEFITS ANALYSIS

## ATTACHMENT 2 NDOT MOBILE EQUIPMENT PURCHASE REQUEST - COSTS AND BENEFITS ANALYSIS

Equipment	Quantity	Price	Total Costs
Class 24 PM-10 Compliant Sweepers Total Purchase Price	1 Sweeper	\$ 296,000	\$ 296,000

### (1) Costs for Purchasing Equipment, Operating and Maintaining

#### NDOT COSTS FOR THE SWEEPING TASK PER YEAR:

Task: Clark County Street Sweeping with PM-10 Compliant Sweepers

Item	Description	Quantity	Rate	Total Costs
1	Equipment Cost per Year	1 Sweeper	\$ 42,988	\$ 42,988
	Other Equipment used for the Task (Impact attenuator, garbage truck, etc.)		\$ 23,737	\$ 23,737
2	All Maintenance, Insurance, and Fuel Costs		\$ 27,862	\$ 27,862
3	Labor Costs related to the Task		\$ 22,845	\$ 22,845
4	Department Labor Overhead		67.28%	\$ 15,370
5	Materials Disposal for the Task		\$ 23,095	\$ 23,095
	<b>Total</b>			<b>\$ 155,877</b>

Note: MMS = Maintenance Management System

4771 Curb Miles/Unit

Average Cost per Curb Mile = \$ 33

### (2) Costs for Leasing, Operating and Maintaining

#### COSTS FOR LEASING THE EQUIPMENT TO DO THE SAME TASK:

Item	Description	Quantity	Rate	Total Costs
1	PM-10 Compliant Street Sweepers (Annual lease rate includes all maintenance & insurance costs)	1 Sweeper	\$ 144,000	\$ 144,000
	Other Equipment used for the Task (Impact attenuator, garbage truck, etc.)		\$ 23,737	\$ 23,737
2	Fuel Cost		\$ 3,899	\$ 3,899
3	Labor Costs Related to the Task		\$ 22,845	\$ 22,845
4	Department Labor Overhead		67.28%	\$ 15,370
5	Materials Disposal for the Task		\$ 23,095	\$ 23,095
	<b>Total</b>			<b>\$ 232,796</b>

Average Cost per Curb Mile = \$ 49

### (3) Costs for contracting for the performance of the work which would have been performed using the mobile equipment

#### COSTS FOR CONTRACTING OUT THE TASK:

Item	Description	Quantity	Rate	Total Costs
1	All Inclusive Street Sweeping (NDOT District 2 freeway contract)	4771 Curb Miles	\$ 59.25	\$ 282,679
2	Department Contract Administration: Procurement and Contract Management (Project Mgr.)	200 Man Hours	\$ 40	\$ 8,000
	Payable Management (Admin. III)	24 Man Hours	\$ 22	\$ 528
	Quality Management	104 Man Hours	\$ 25	\$ 2,600
3	Department Labor Overhead		67.28%	\$ 7,487
	<b>Total</b>			<b>\$ 301,290</b>

Average Cost per Curb Mile = \$ 63

## ATTACHMENT 2 NDOT MOBILE EQUIPMENT PURCHASE REQUEST - COSTS AND BENEFITS ANALYSIS

Date: 7/22/2015

Equipment	Quantity	Price	Total Costs
Class 20 Culvert Cleaner Truck	1 Units	\$250,000.00	\$250,000.00

FUNDING: FY 2016 Equipment - Category 05

### (1) Costs for Purchasing Equipment, Operating and Maintaining

#### NDOT EQUIPMENT COSTS - STRAIGHT-LINE DEPRECIATION FOR 8 YEARS AND ESTIMATED MAINTENANCE COSTS:

Task: Operate Culvert Cleaner Truck

Item	Description	Quantity	Rate	Total Costs
1	Culvert Cleaner Truck	800 Estimated Hrs	\$36.72	\$29,376
2	Labor related to the Task (Worker III 29-05)	800 Estimated Hrs	\$20.27	\$16,216
3	Labor related to the Task (Worker IV 29-05)	800 Estimated Hrs	\$22.04	\$17,632
4	Department Labor Overhead		67.28%	\$28,079
	Estimated yearly Maint cost of Class 20			\$11,110
	<b>Total</b>			<b>\$102,413</b>

Note:

Average Cost per Hour = \$128

### (2) Costs for Leasing, Operating and Maintaining

#### COSTS FOR LEASING THE EQUIPMENT TO DO THE SAME TASK PLUS NDOT MAINTENANCE COST:

Item	Description	Quantity	Rate	Total Costs
1	Culvert Cleaner Truck	800 Estimated Hrs	\$168.75	\$135,000
2	Labor related to the Task (Worker III 29-05)	800 Estimated Hrs	\$20.27	\$16,216
3	Labor related to the Task (Worker IV 29-05)	800 Estimated Hrs	\$22.04	\$17,632
4	Department Labor Overhead		67.28%	\$28,079
	Estimated yearly Maint cost of Class 20			\$11,110
	<b>Total</b>			<b>\$208,037</b>

Note: Rate is based on current rental in D2

Average Cost per Hour = \$260

### (3) Costs for contracting for the performance of the work which would have been performed using the mobile equipment

#### COSTS FOR CONTRACTING OUT THE TASK:

Item	Description	Quantity	Rate	Total Costs
1	Equipment Blue Book Rental Rate for Truck and Basin Cleaner	800 Equipment Hours	\$166.73	\$133,384
2	Equipment operator w/all benefits (Operator Group II)	1600 Man Hours	\$62.22	\$99,552
3	Department Contract Administration: Procurement and Contract Management	40 Man Hours	\$40.00	\$1,600
	Quality Management	40 Man Hours	\$40.00	\$1,600
	<b>Total</b>			<b>\$228,136</b>

Note: Without long term contract to cover initial equipment costs, equipment rate used may be to low.

Average Cost per Hour = \$285



# Attachment 2 – COST AND BENEFITS ANALYSIS

## ATTACHMENT 2

### NDOT MOBILE EQUIPMENT PURCHASE REQUEST - COSTS AND BENEFITS ANALYSIS

Date: 7/22/2015

Equipment	Quantity	Price	Total Costs
Viking TP26, 26' Tow Plow (Class 607)	2 Units	\$100,000.00	\$200,000.00

FUNDING: FY 2016 Equipment - Category 05

#### (1) Costs for Purchasing Equipment, Operating and Maintaining

##### NDOT COSTS FOR THE TASK FROM PREVIOUS FISCAL YEARS:

Task: Snow removal using tow plow

Item	Description	Quantity	Rate	Total Costs
1	26 foot tow plow	150 Estimated Hrs	\$97.33	\$14,600
2	Additional Fuel to tow plow	1500 Estimated miles	\$0.10	\$150
Savings				
1	Labor Savings related to the Task (Worker III 29-05)	150 Estimated Hrs	-\$20.27	-\$3,041
2	Department Labor Overhead	67.28%		-\$2,046
3	Equipment savings Class 13 truck maintenance cost only per mile	1500 Estimated miles	-\$2.02	-\$3,030
4	Equipment savings Sander maintenance cost only	150 Estimated Hrs	-\$13.78	-\$2,067
5	Equipment savings Plow maintenance cost only	150 Estimated Hrs	-\$7.80	-\$1,170
Total				\$3,396

Note:

Average Cost per Hour = \$23

#### (2) Costs for Leasing, Operating and Maintaining

##### COSTS FOR LEASING THE EQUIPMENT TO DO THE SAME TASK:

Item	Description	Quantity	Rate	Total Costs
1	26 foot tow plow Lease	1 Year	\$35,471.52	\$35,472
2	Maintenance cost only	150 Estimated Hrs	\$14.00	\$2,100
3	Additional Fuel to tow plow	1,500 Estimated miles	\$0.10	\$150
Savings				
1	Labor Savings related to the Task (Worker III 29-05)	150 Estimated Hrs	-\$20.27	-\$3,041
2	Department Labor Overhead	67.28%		-\$2,046
3	Equipment savings Class 13 truck maintenance cost only per mile	1500 Estimated miles	-\$2.02	-\$3,030
4	Equipment savings Sander maintenance cost only	150 Estimated Hrs	-\$13.78	-\$2,067
5	Equipment savings Plow maintenance cost only	150 Estimated Hrs	-\$7.80	-\$1,170
Total				\$26,368

Equipment Annual Lease Rate quoted is a finance/ownership contract.

Rate above is a three year contract at 4.080% interest

Current rate for a Class 13 is 4.33 percent for 5 years

Average Cost per Hour = \$176

#### (3) Costs for contracting for the performance of the work which would have been performed using the mobile equipment

##### COSTS FOR CONTRACTING OUT THE TASK:

Item	Description	Quantity	Rate	Total Costs
1	Equipment Blue Book Rental Rate for Truck, plows, sanders, and trailer: (Used Previous Blue Book Rates)	150 Equipment Hours	\$216.05	\$32,408
2	Equipment standby (Cover non use in 3 month period)	330 Hours	\$108.03	\$35,648
3	Equipment operator w/all benefits	150 Man Hours	\$69.40	\$10,410
4	Department Contract Administration			
	Procurement and Contract Management	120 Man Hours	\$40.00	\$4,800
	Quality Management	96 Man Hours	\$40.00	\$3,840
Savings				
1	Labor Savings related to the Task (Worker III 29-05)	300 Estimated Hrs	-\$20.27	-\$6,081
2	Department Labor Overhead	67.28%		-\$4,091
3	Equipment savings Class 13 truck maintenance cost only per mile	3000 Estimated miles	-\$2.02	-\$6,060
4	Equipment savings Sander maintenance cost only	300 Estimated Hrs	-\$13.78	-\$4,134
5	Equipment savings Plow maintenance cost only	300 Estimated Hrs	-\$7.80	-\$2,340
Total				\$64,400

Note: Without long term contract to cover initial equipment costs, equipment rate used may be too low.

Average Cost per Hour = \$429

## ATTACHMENT 2

### NDOT MOBILE EQUIPMENT PURCHASE REQUEST - COSTS AND BENEFITS ANALYSIS

Date: 6/14/2015

Equipment	Quantity	Price	Total Costs
Viking TP26, 26' Tow Plow (Class 607)	2 Units	\$100,000.00	\$200,000.00

FUNDING: FY 2016 Equipment - Category 05

#### (1) Costs for Purchasing Equipment, Operating and Maintaining

##### NDOT COSTS FOR THE TASK FROM PREVIOUS FISCAL YEARS:

Task: Snow removal using tow plow

Item	Description	Quantity	Rate	Total Costs
1	26 foot tow plow	150 Estimated Hrs	\$97.33	\$14,600
2	Additional Fuel to tow plow	1500 Estimated miles	\$0.10	\$150
Savings				
1	Labor Savings related to the Task (Worker III 29-05)	150 Estimated Hrs	-\$20.27	-\$3,041
2	Department Labor Overhead	67.28%		-\$2,046
3	Equipment savings Class 13 truck maintenance cost only per mile	1500 Estimated miles	-\$2.02	-\$3,030
4	Equipment savings Sander maintenance cost only	150 Estimated Hrs	-\$13.78	-\$2,067
5	Equipment savings Plow maintenance cost only	150 Estimated Hrs	-\$7.80	-\$1,170
Total				\$3,396

Note: A negative cost, is a savings to the Department for every hour of use.

Average Cost per Hour = \$23





# QUESTIONS ?

